

Case Number 1:

The Drunken Lorry Driver

Latung, a 55 year-old driver, came into the clinic after some yak herders found him drunk and unconscious at the wheel of his truck, which was stuck in the middle of a river several kilometers away.

Dr. Crayfish reports that Latung is malnourished, has a fever, and is having difficulties breathing. After he regained consciousness, Latung told Dr. Crayfish that he had been suffering from a severe cough, chills, fever, and chest pain. Latung said he first noticed the cough after a short stay in a camp for transport drivers.

Dr. Crayfish collected a rust colored sputum sample, which just arrived at your lab.

Case Study Number 2:

The sick baby

Losang is a 4-month-old female who was brought to the clinic with severe respiratory distress. Five days prior to admission she developed a cough. Two days later she began wheezing and was thought to have a fever. One of her siblings was reported to be coughing and her father had recently had a cold. She was brought to the clinic when she became lethargic.

Doc Crayfish managed to get the old x-ray machine to work thanks to your solar panels and an x-ray of her chest revealed interstitial infiltrates. By taking the pulse of the baby, the old Mongolian doctor was able to determine that the blood was yin, or in western medical terms, the baby was suffering from respiratory acidosis.

Nasopharyngeal swabs were obtained and brought to your yurt.

Case Study 3:

The toddler with facial sores

Pumba is a healthy 3-year-old whose mother has meticulously seen to his scheduled immunizations (provided to the clinic by the World Health Organization). He has received DPT, polio and chickenpox immunization. He spends most of the days playing with other children in a nearby summer pasture camp. One day she goes to call him home and sees that Pumba is playing with a new child recently arrived in camp.

The new child has several red sores around his nose and mouth. Several days later, Pumba starts to develop similar sores. His mother applies a poultice of some plant material, which she has used in the past with apparent success to treat some skin lesions. The poultice doesn't seem to be helping, in fact, the sores are filling with fluid, rupturing and crusting over. The infection is also spreading and her older child is now showing signs of the same sores. Alarmed, she brings the children to the clinic.

Dr. Crayfish takes a culture and brings it to you.

Case Study 4:

The girl who helps you in the lab

Genla is a healthy 14 year old who lives with her Grandfather, Doctor Lhamo. Curious about medicine, the lab, and you (a strange and fascinating foreigner), Genla is eager to help in any way she can. Good with the patients, she helps with dressings, cleanup, and some of the duties in the lab such as filing and heating the makeshift pressure cooker/autoclave. Although you have taught her about aseptic procedure, she does forget that danger can lurk unseen in cultures, bandages, and water because frequent hand-washing is somewhat scarce.

The clinic facilities are slim and it is not unusual for Genla to share her mat and blankets with other children that visit the clinic from the camp near summer pastures. Genla develops sores around her mouth and nose that fill with fluid, rupture, and crust over. Her grandfather tries a local remedy but it doesn't seem to improve the condition.

Dr. Crayfish suggest that she take some antibiotics and takes a culture sample for you.

Case Study 5:

The Infant with seizures

Fall is approaching and most of the people have left the summer pastures for their villages to the distant south. Dr. Crayfish and you travel to the town 300 km from your clinic. Your supplies of gas bottles for the Bunsen burner and candles for reading and the incubator are very low and Dr. Crayfish helps out in the town hospital for a few days every few months.

A young mother comes into the hospital in a difficult labor. Dr. Crayfish determines that he must perform a caesarean delivery. The baby is fully developed but has a diaphragmatic hernia that the doctor repairs. Over the 24 hour period following the repair, the baby develops bulging anterior frontals, increased respiration, and heart rate, and wide fluctuations in blood pressure. The doctor takes some blood and the white cell count has increased. The baby begins to have seizures.

Dr. Crayfish takes a sample of the cerebrospinal fluid and you take it to the lab which is in a shed behind the hospital.

Case Study 6:

The man who was in a fight

You are in a rugged frontier town you have visited with Dr. Crayfish after most of the herders have left the high summer pastures near your clinic. Dr. Crayfish is working for several days in the local clinic/hospital.

A 27 year old man named Dechen comes to the clinic to get patched up after a rather nasty fight over a woman. His nose is badly broken and Dr. Crayfish sets and packs his nose with an absorbent material. Three days later Dechen returns, carried by his brother and the man who broke his nose; he has developed a skin rash, fever, and diarrhea. You help the doctor examine Dechen and report that his blood pressure is falling and he seems to be going into shock.

Dr. Crayfish takes a culture sample from the nose and you take the sample to the lab shack behind the hospital.

Case Study 7:

You get sick...

You have been busy setting up your lab, training your 14-year-old assistant, helping the doctors in the clinic, and haven't even begun to slow down from the frantic pace you set for yourself even before you left home to come to Inner Mongolia.

By sucking on Sailor's remedy cough drops, you have ignored a painful sore throat that doesn't seem to go away. You finally talk to Dr. Crayfish after you wake up with a rash that spreads across your torso. You are also getting chills, you think you have a fever and your head aches. Dr. Crayfish takes a throat culture and you go to bed in your lab/home.

From your sick bed, you must direct Dr. Crayfish and your 14-year-old assistant to do a series of tests in order from them to diagnose your illness and find the causative agent.

Case Study 8:

The unhappy herder

Pema, an 18-year-old yak herder is intrigued by the life of the caravan drivers. Pema's tent is pitched near the old Mongolian salt route conveniently near a popular encampment for the lorry drivers. The lorry drivers also provide the transportation for the people scattered across the steppes. It is not uncommon to see a family and their animals perched precariously atop one of these trucks. The caravan camp has been the scene for many a party as old friends, both herders and drivers meet and share food and liquor. Last night was not much different. Pema was invited to join and brought a fresh batch of chang. Two days ago, a woman riding on one of the trucks killed some chickens that had been trying to peck her baby. They are part of tonight's shared supper. Pema has imbibed a fair amount of chang and now is hungry and a bit intoxicated. He grabs a half cooked piece of chicken from the fire and proceeds to eat it despite the protests of the cook!

Twenty four hours later Pema is groaning from abdominal cramps, diarrhea, nausea and vomiting. He feels quite warm to the touch. He catches a ride to the clinic. The ride is arduously long.

Dr. Crayfish takes some loose stool samples and sends them to you for analysis.

Case Study 9:

The woman with lower back pain

Tara is a 22-year-old woman with a history of bronchial problems. Years of living in smoky yurts has contributed to frequent respiratory infections. She is beloved by her family and husband, sweetly tempered and generous to all. She has been treated often with the local herbal medicines by Doctor Lhama. They have not been making her any better and two days ago she became so ill that Doctor Lhama has brought her to see Doctor Crayfish.

She tells the doctor that 5 days earlier she felt nauseous but did not vomit. The day after that she developed left lower back pain, fevers, chills and noticed that she had to get up to urinate more frequently. On the day before she came to the clinic, she noticed her urine was foul-smelling.

She had already supplied Dr. Lhama with a urine sample, a common test in traditional Asian medicine. The sample has been sent to your lab.

Case Study 10:

The elderly nun with pink urine

Anila is an 87-year-old nun who has survived the many years of religious and cultural repression by living reclusively in the nearby mountains. She lives alone, happy to meditate and grateful for the supplies the local residents leave near her cave door. She is viewed by the village as a good spirit looking over their village. Doctor Lhamo visits her occasionally, bringing medicines and receiving advice on meditation. Anila's greatest pleasure is to take a daily hot bath in a slowly trickling hot spring. She believes it keeps her fit and healthy. This same hot springs was recently visited by a number of lorry drivers long accustomed to the public baths in Kalapatha.

Anila has had the flu for a week and has missed her daily baths. Several days after returning to her hot soaks, she was awakened in the middle of the night with lower back pain and increased urination. By morning, her urine was pink and she was in considerable pain. Fortunately, you and Dr. Lhama had been riding out to see her and you brought her back to the clinic for treatment. You collect a urine sample.

Case Study 11:

The pregnant lady with pink urine

Wangmo is a 23-year-old woman married late in life to Pema, a younger yak herder. She is pregnant with their first child. She is a very active woman, caring for her grandmother and her younger siblings as well as looking after her new husband and the goats and sheep that live around their yurt. After long and physically exhausting days, Wangmo usually sleeps well despite her pregnancy induced need to urinate more frequently.

Last night she awoke with a constant pain in her lower back. In the morning she was in considerable pain and was surprised to see that her urine was pink. The grandmother is the local mid wife and is sure Wangmo is not going into labor. She is worried however that this might affect the baby. A lorry driver stops by the yurt with Pema, her husband who got sick at the driver's camp the night before. The grandmother convinces the driver to take both Wangmo and Pema to the clinic. You obtain a urine sample from Wangmo.

Case Study 12:

The baby with seizures

Hmong is a three-week-old who was born at term after Dr. Crayfish performed an emergency Caesarian section in the family's yurt. Hmong was born with a diaphragmatic hernia, which was repaired after they moved the baby to the clinic. The whole family was staying with Dr. Crayfish to provide round the clock respiratory support for Hmong.

Over a 24-hour period Hmong developed bulging frontonals, increased respiratory and heart rates, and wide fluctuations in blood pressure. His white blood cell count increased and he began to have seizures. Dr. Crayfish took a cerebrospinal fluid sample and rushed it to your yurt. Dr. Crayfish is anxious for the results of tests. He came here to help break the centuries old pattern of early childhood mortality.

Case Study 13:

Fish with sores

Sam has recently graduated from Humboldt State with a Master's degree in Fisheries Biology. The Peace Corp has sent her to another remote village to develop a freshwater aquaculture industry to provide the village with a reliable source of protein and income. The village is excited about the project. Everything has been going very well until the fish start to have lesions all over their bodies. The villagers won't be able to sell fish with sores. More importantly, they are worried they will get the same sores as the fish.

Sam is desperate to save the project and has brought you a tube with media that she placed some scrapings from the fish lesions in. You aren't sure where to start since you are most familiar with human pathogens, not zoonoses. Sam gives you the email address of her fisheries microbiology instructor so that you can contact him for some background information on where to get started. You use your satellite uplink on your laptop computer to get in touch with him. You follow the same protocols for bacterial isolation as you do with your clinical samples while you wait for a response from Sam's professor.

Case Study 14:

Thin man with inflammation and fever

The herders have left their summer pastures so you and Dr. Crayfish visit the regional capital in order to restock and work at a small hospital. This town is known for legalized gambling, seedy entertainment, and growing tourism. Many back-alley businesses operate on a 24-hour a day basis trading in black market items, currency, and even drugs. As is common in “third-world” cities, Western influences begin to disrupt the traditional culture. This may result in intravenous drug use, drug labs, transient population, gang activity, ethnic conflict, and a population of displaced people. These are everyday issues for the inadequate medical, social, and law enforcement infrastructure. Low income in a significant proportion of the population drives many to work two jobs or work graveyard shifts and methamphetamine use is increasingly a means for some to cope with difficult conditions.

While in the capital, you are helping out in the lab of the hospital and you have just been given a blood sample for a patient who is reported to be an intravenous drug user (IVDU). The patient has been admitted due to cellulitis in his arm (look this up, it has nothing to do with lumpy thighs), fevers, associated chills, and dizziness. During the physical exam, the patient is found to have a heart murmur as well as various signs of IV drug use. You need to determine the infective agent.